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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

PREVIL, DANIEL

ART UNIT PAPER NUMBER

2632

DATE MAILED: 02/25/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/683,782

Applicant(s)

RAO ET AL.

Examiner

Daniel Previl

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 February 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Cho (US 5,959,552).

Regarding claim 1, Cho discloses a vision system (radar 12) for generating an object size signal (small object 50 in the rear of the vehicle 10) (col. 11, lines 44-47); and object distance signal (each radar 12 transmits distance data of any obstacle in the ranges of distance in meters from the unit) (col. 12, lines 51-54); a controller (CPU 18) coupled to the vision system (radar 12) for deploying either first countermeasure (brake) in response to object distance signal and object signal (the cpu 18 generates control signals 86 to the intelligent cruise control system 76 to change speed of the roadway vehicle, accelerate or brake the vehicle according to the speed of the obstacle) (col. 12, lines 51-67; col. 13, lines 1-11).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shirai (US 6,018,308) in view of Miller et al. (US 6,442,484).

Regarding claim 1, Shirai discloses a vision system (radar unit) for generating object size signal (obstacle height) and an object distance signal (obstacle distance) (col. 2, lines 6-24).

Shirai fails to explicitly disclose a controller coupled to vision system for deploying either first countermeasure or first or second countermeasures in response to object distance signal and object size signal.

However, Miller discloses a controller 12 coupled to radar sensor 29 for deploying first counter measure in response to distance signal (display and warning indicators configured to a countermeasure to indicate to the operator a counter is being activated because of the distance from the vehicle) (fig. 1; col. 5, lines 5-15).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Miller in Shirai.

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Doing so would inform accurately the driver to take appropriate measure to avoid accident which may lead to property damage and personal injury.

2. Claims 2-6, are rejected under 35 U.S.C. 103(a) as being unpatentable over Shirai in view of Miller and further in view of Kinoshita et al. (US 6,114,951).

Regarding claim 2, the above combination discloses all the limitations in claim 1 but fails to explicitly disclose a stereo pair of cameras.

However, Kinoshita discloses a pair of stereoscopic pictures taken by the stereoscopic optical system 10) (col. 2, lines 41-65).

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Kinoshita in Shirai and Miller. Doing so would be able to take an extensive view of objects ahead of the preceding vehicle as well as ahead of the self vehicle to avoid accident which may lead to personal injury and property damage.

Regarding claims 3-4, Shirai discloses object size comprises object area and object height (col. 2, lines 15-24).

Regarding claim 5, the above combination discloses all the limitation 1 and Miller further discloses a vehicle speed sensor corresponding to the longitudinal speed of the vehicle wherein controller activates countermeasure system in response to the speed (col. 4, lines 3-27). Same motivation as claim 1.

Regarding claim 6, Shirai discloses a decision zone (detectable zone) wherein radar detects an object and generates an object distance signal from an object within the detectable zone (col. 6-14).

3. Claims 7-11, are rejected under 35 U.S.C. 103(a) as being unpatentable over Shirai in view of Miller.

Regarding claims 7-11, Shirai discloses the step of establishing a decision zone relative to the vehicle (detectable zone) (col. 2, lines 6-14); detecting an object within the decision zone using a vision system (radar unit transmitting an obstacle signal in the detectable zone) (col. 2, lines 6-14); determining an object distance and relative velocity using a vision system (col. 2, lines 6-35col. 4, lines 25-45); determining an object size (height of the obstacle) (col. 2, lines 15-24).

Shirai discloses all the limitations in claim 7 but fails to explicitly disclose the step of activating a countermeasure in response in response to the object size and relative velocity.

However, Miller discloses the step of activating a countermeasure in response in response to the object size and relative velocity (countermeasure is being activated related to the vehicle or object) (col. 5, lines 5-15; col. 4, lines 3-27).

4. Claims 12-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shirai in view of Miller and further in view of Kinoshita et al. (US 6,114,951).

Regarding claim 12, the above combination discloses all the limitations in claim 1 but fails to explicitly disclose a stereo pair of cameras.

However, Kinoshita discloses a pair of stereoscopic pictures taken by the stereoscopic optical system 10) (col. 2, lines 41-65).

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Kinoshita in Shirai and Miller. Doing so would be able to take an extensive view of objects ahead of the preceding vehicle as well as ahead of the self vehicle to avoid accident which may lead to personal injury and property damage.

Regarding claim 13, the above combination discloses all the limitations in claim 6 and Miller further discloses a first countermeasure 40 and a second countermeasure 36) (fig. 1).

Regarding claim 14, the above combination discloses all the limitation in claim 12 and Miller discloses vehicle orientation (vehicles are traveling in different planes) wherein activating the countermeasure system in response to the object size and vehicle orientation (col. 5, lines 5-67).

Regarding claim 15, Shirai discloses detectable zone 81 in front of the vehicle (fig. 3).

Regarding claim 16, the above combination discloses all the limitations in claim 12 and Miller further discloses activating a countermeasure in response to detecting an object within the decision zone (col. 5, lines 5-67).

Regarding claim 17, the above combination discloses all the limitation in claim 7 and Miller further discloses countermeasure system 40 comprises airbag and belt pretensioning (fig. 1; col. 1, lines 37-43).

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Miller et al. (US 6,480,102) discloses a method and apparatus for activating a crash countermeasure in response to the road condition.

Adolph et al. (US 5,785,347) discloses an occupant sensing and crash behavior system.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel Previl whose telephone number is 703 305-1028. The examiner can normally be reached on Monday-Thursday. The examiner can also be reached on alternate Fridays.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel WU can be reached on 703 308-6730. The fax phone numbers for the organization where this application or proceeding is assigned are 703 872-9314 for regular communications and 703 872-9315 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 305-4700.

Daniel Previl
Examiner
Art Unit 2632

DP
February 21, 2003


DANIEL J. WU
PRIMARY EXAMINER
DANIEL J. WU
PRIMARY EXAMINER

2/21/03